MINERVA

PE2403 Converter Card

Performance & Burn In Test Rev. 1. 0

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PE2403 M.3 M-key Golden Finger to M.2 connector

1. Overview

PE2403 adapter, providing M.2 M-key connector can be M.2 (PCI-e I/F NVMe) SSD converted into M.3 Golden Finger.

2. Tools and Results of Performance Measurement

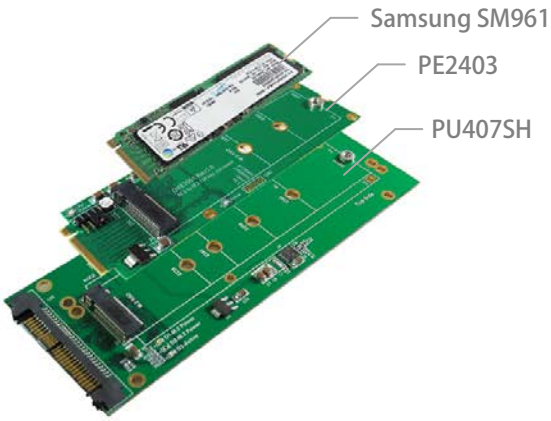
2.1 Test Platform

M/B :	GIGABYTE **Z170X UD5 TH**
CPU :	Intel **i5-6500,** 3.2GHz/ 6M Cache/ LGA1150
Memory :	Kingston **KVR21N15D8/8,** DDR4-2133MHz, **16GB**(8GB DIMM*2)
ATX Power :	COOLER MASTER G750M, **750W ATX**, 12V V2.2 Power Supply
Graphic :	Z170 Chipsets built-in **HD Graphics 530**
Adapter:	PE0404 PCIe to SFF-8643 Mini SAS HD
Adapter:	PU407SH U.2(SFF-8639) to M.2/M.3 SSD
Cable:	Amphenol U.2(SFF-8639) to SFF-8463 Mini SAS HD Cable
OS :	Microsoft **Windows 10 64bit OS**

2.2 Test target: PE2403 adapter & Samsung SM961 512GB NVMe SSD

PE0404 Adapter

U.2 to Mini SAS HD Cable



2.3 Install Hardware

Inserts M.2 SSD into PE2403 converter's M.2 M-key connector, and then plugs PE2403 into PU407SH adapter. Connects PU407SH converter to PE0404 adapter(PCI-e 4-lane to Mini SAS HD SFF-8643) using U.2 cable, Plug PE0404 into **PCI-e slot of Z170X UD5 TH.**

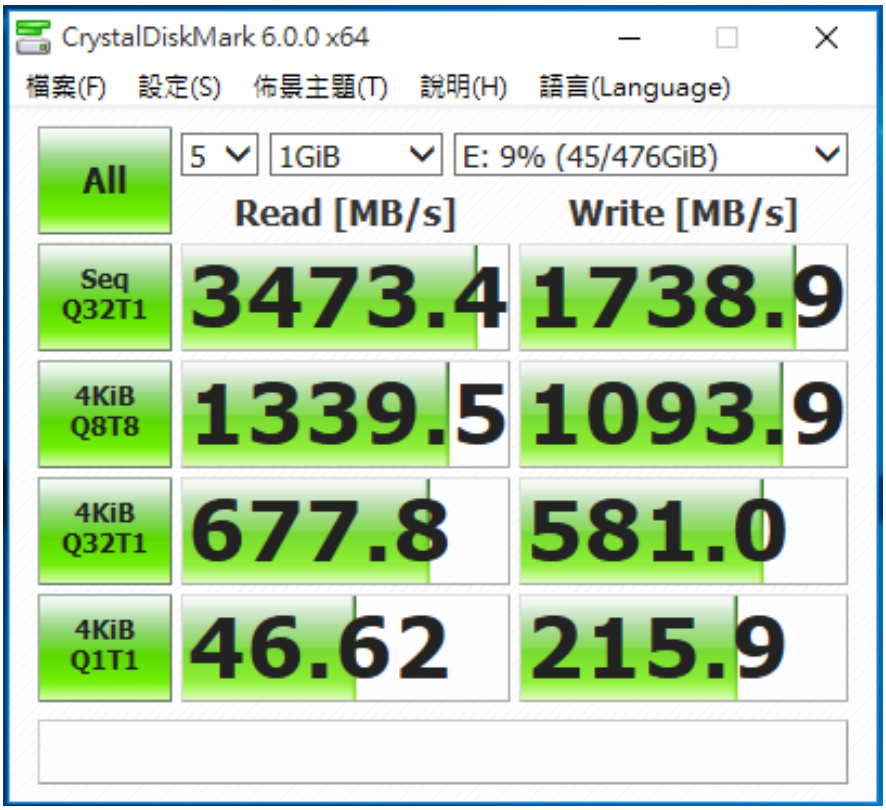
2.4 BIOS & Windows 10 OS environment setup

2.4.1 In Windows 10, formatted M.2 SSD to NTFS Mode. Don't install any program.

2.5 CrystalDiskMark 6.0.0 x64 performance test

※Benchmark (Sequential Read & Write / default = 1MB)

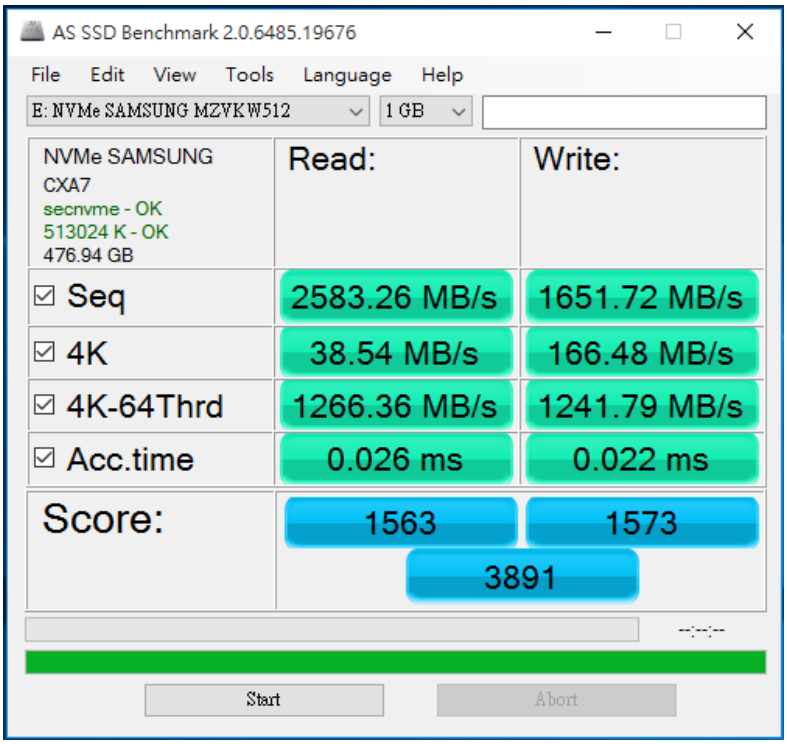
2.5.1 Shows **Samsung SM961 M.2**/**512GB** performance as below:



2.6 AS SSD Benchmark 2.0 performance test

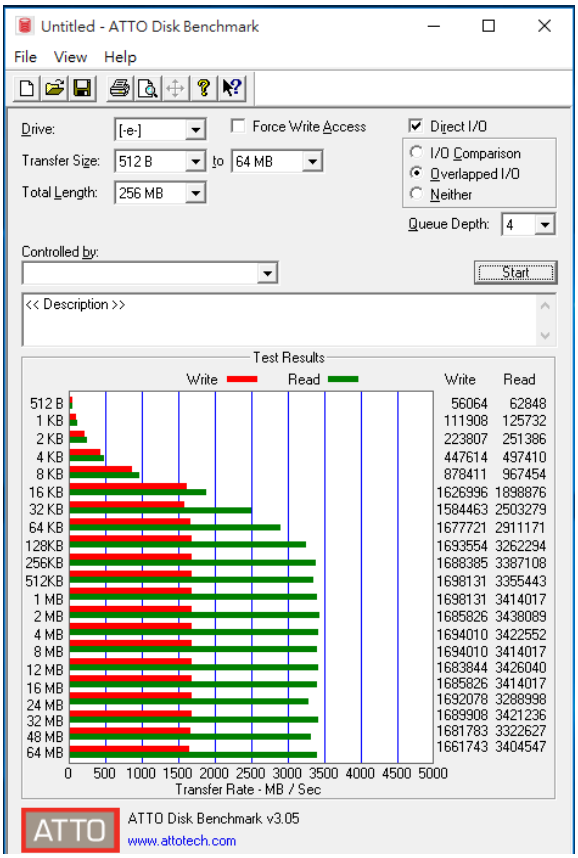
※Benchmark (Read & Write by MB/s, default block size = 16MB)

2.6.1 Show Samsung SM961 M.2/512GB performance as below:



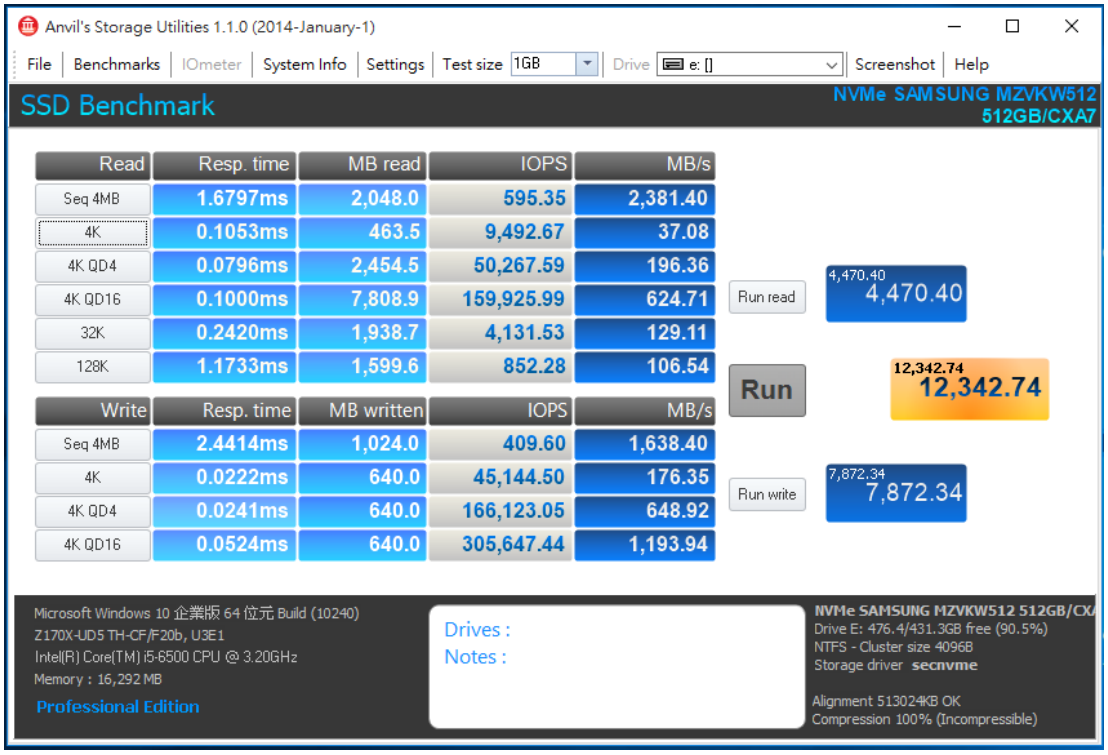
2.7 ATTO Disk Benchamrk 3.0.5 performance test

2.7.1 Show Samsung SM961 M.2/512GB performance as below:



2.8 AnvilBenchmark_V110_B337

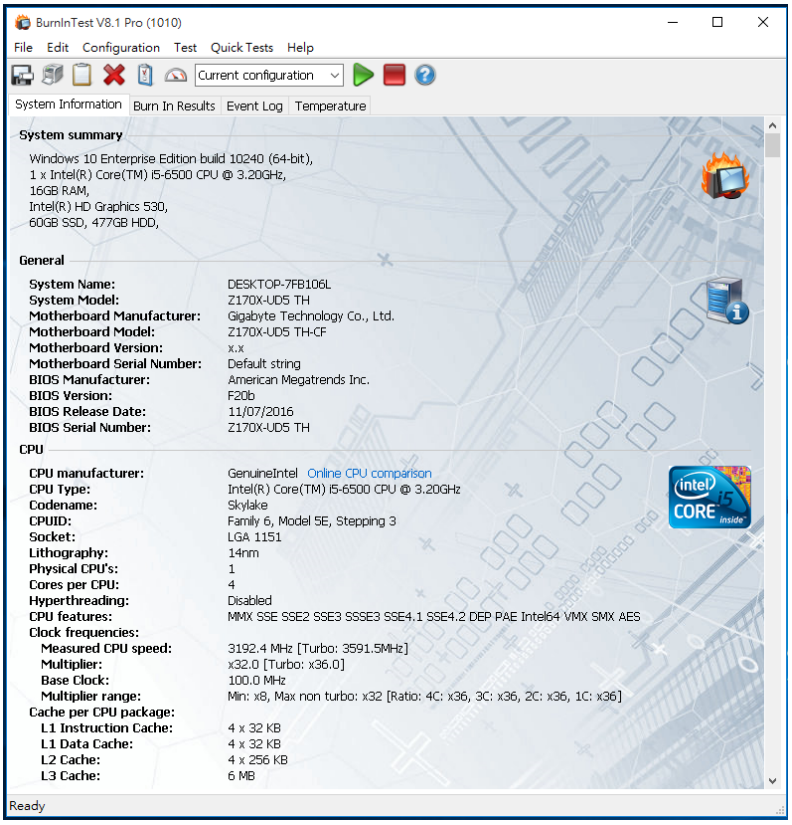
2.8.1 Show Samsung SM961 M.2/512GB performance as below:



3. Burn In Tests and Results

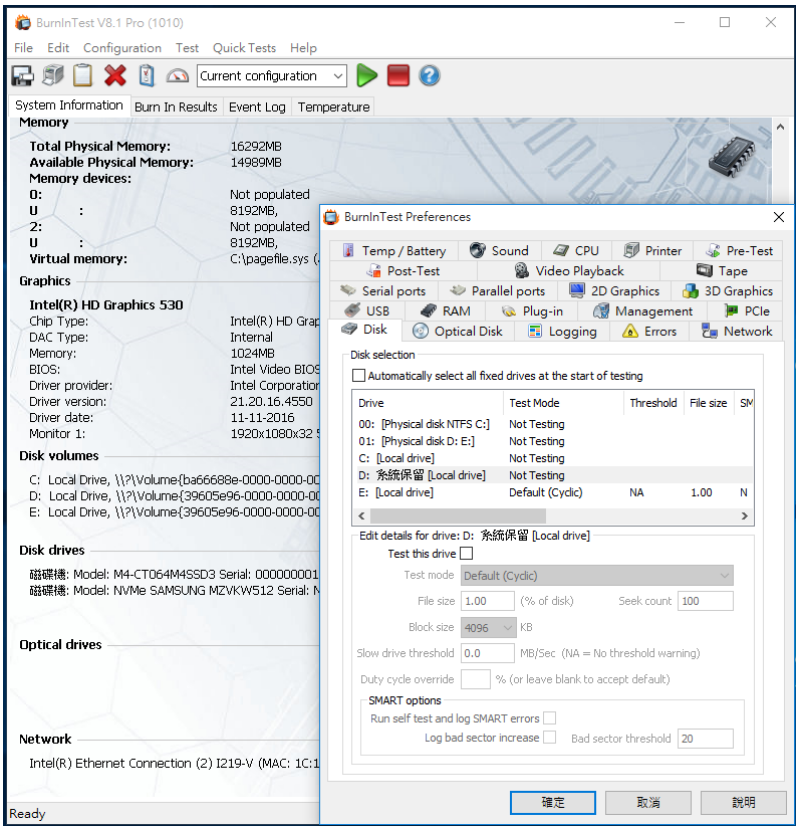
3.1 BurnInTest v8.1 Pro for Samsung SM961 M.2/512GB SSD

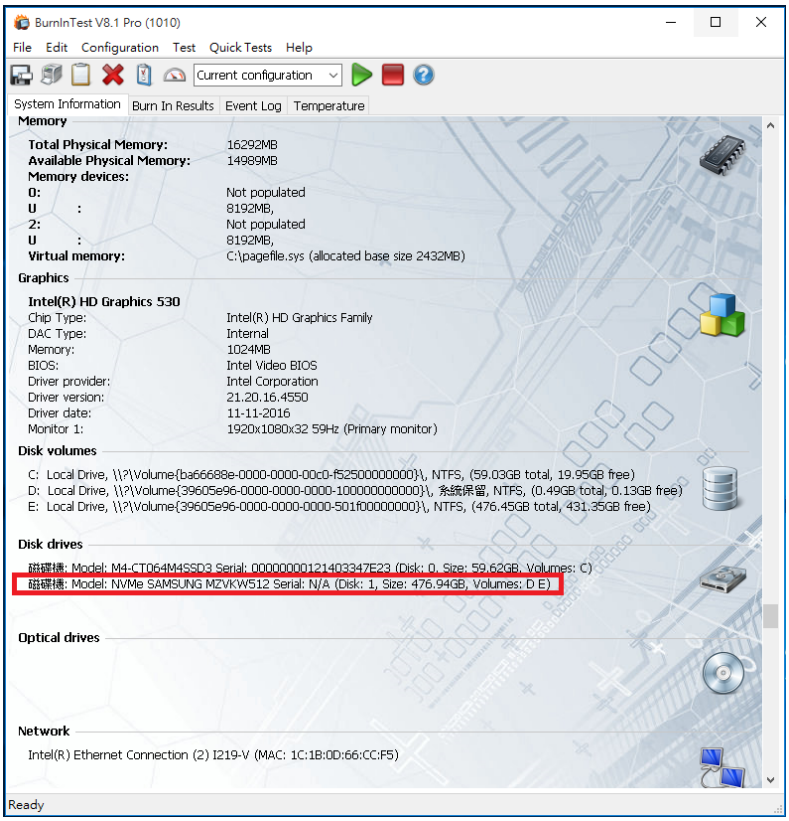
3.1.1 system information as below:



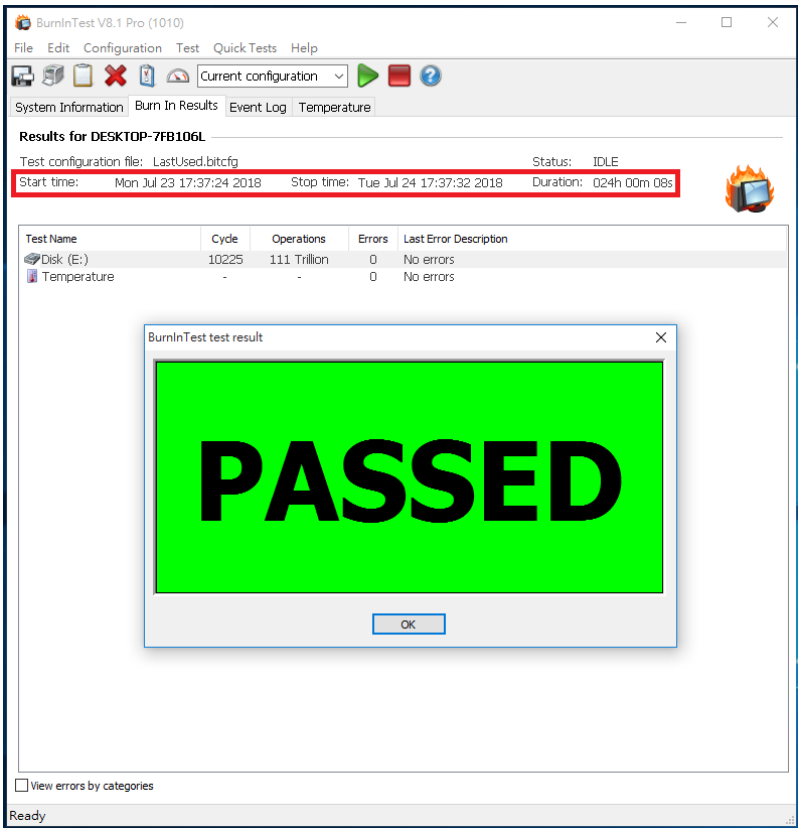
3.1.2 Shows Disk test mode(10 ways cycle test)

PE2403 M.3 M-key Golden Finger to M.2 connector





3.1.2 Shows 24-hour Burn-in test PASSED



4. Summary

4.1 M.2 SSD is PCI-e Gen 3 / 4 Lanes Interface, I/O speed, max. to 32Gbps.

4.2 PE2403 adapter I/O performance is based on M.2 NVMe PCI-e Gen 3 / 4 Lanes SSD.